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throughout the longitudinal direction thereby facilitating the press-fitting of an antenna into the receiving channel by placing the antenna external to the receiving channel in a longitudinal parallel arrangement and then pressing and snapping the antenna into the receiving channel which could further engage a contact interface with the PDA in a manner other than slide contacts or terminal/termination contacts. Those skilled in the art of such interfaces appreciate the myriad of alternative contact interfaces available, which are herein considered to be within the scope of the present invention.

FIG. 4 depicts a cut away electrical diagram illustrating the electrical feasibility of a user selectable relocation of an antenna within a PDA or wireless transceiver device as described herein. The PDA is generally shown, with the top end of the PDA housing 60 and symmetrical receiving channels 40 and 50 depicted generally. While the present figure depicts stylus 20 being received in first symmetrical receiving channel 40 and antenna 170 being received within second symmetrical receiving channel 50, it is essential to point out that such a configuration is only illustrative and the arrangement of the present invention depicts a symmetrical nature wherein stylus 20 and antenna 170 may be exchanged according to a user preference or other preferred configuration to be received into opposing receiving channels while preserving full functionality of the device.

FIG. 4 depicts a transceiver 120 which may take the form of a receiver wherein the PDA device is a receive only or "pager" device, or alternatively may take the form of a transmit-capable device. The present invention contemplates all such configurations both receive-only, and transmit/receive (transceive) configurations.

Those skilled in the art of transmission theory appreciate that the routing of electromagnetic signals from the transceiver to the antenna must be performed using transmission line theory guidelines. In accordance with such transmission line guidelines, FIG. 4 depicts a plurality of electrically symmetrical transmission lines, transceiver output transmission line 130 and transceiver output transmission line 140 which originate at transceiver 120 and terminate at a position conducive for interfacing with antenna 170. Again, it should be pointed out that antenna 170 while depicted in FIG. 4 as being received within symmetrical receiving channel 50, may equally be received within receiving symmetrical channel 40 without any impact to performance. FIG. 4 further depicts the electrically symmetrical configuration of transceiver output transmission lines such that an unloaded transmission line, in FIG. 4 transmission line 130, does not create interfering reflections either back to transceiver 120 or onto transceiver output transmission line 140 for contamination of the propagated electromagnetic field emanating from antenna 170. It should be reiterated that such a configuration is advantageous in order to preserve the integrity of the transceived signal from the PDA.

FIG. 4 further depicts the preferred embodiment of a transmission line contact interface by depicting transmission line contact interface 150 and 160 as being spring contact interfaces. It should be recalled that such spring-contact interfaces are only one contact interface from among many contact interfaces including those previously described. In the present contact interface, it is illustrated that antenna 170 is comprised of a terminal end 180 wherein, in the preferred embodiment, the interface between antenna 170 and transmission line contact interface 160 is performed.

A wireless personal data assistant or other wireless transceiver device having an improved apparatus for accommo-

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dating a user selectable placement of an antenna from among a plurality of possible placements of the antenna has been described. The advantages and benefits of a user selectable placement of an antenna in a more desirable configuration has been shown. Those skilled in the art appreciate the existence and possibilities of various permutations of receiving channel configurations and shapes as well as antenna and stylus configurations and shapes. Furthermore, the PDA or wireless transceiver device may take other specific embodiments such as computers or other handheld devices that employ wireless transceiving. Such varieties are contemplated within the scope of the present invention.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. In a wireless personal data assistant, an apparatus for accommodating a user-selectable placement of an antenna for use in wireless communications by said wireless personal data assistant, said apparatus comprising:

- a) a user-removable antenna having a first end for indirectly coupling with a transceiver of said wireless personal data assistant and a second end for extending at least partially outside said wireless personal data assistant for facilitating said user selectable placement of said user-removable antenna;
- b) a plurality of receiving channels integral with said wireless personal data assistant, said plurality of receiving channels each capable of receiving therein said user-removable antenna; and
- c) a plurality of electrically symmetrical transmission lines electrically coupled at a first end to said transceiver with a second end extending at least partially into a corresponding one of said plurality of receiving channels for electrical coupling with said user removable antenna, said plurality of electrically symmetrical transmission lines configured such that when said user-removable antenna is placed within one of said plurality of receiving channels and electrically coupled to one of said plurality of electrically symmetrical transmission lines, each other of said plurality of electrically symmetrical transmission lines exhibit infinite impedance to said transceiver.

2. The apparatus as recited in claim 1, wherein said plurality of receiving channels are further configured to receive for storage a stylus of said personal data assistant in at least one of said plurality of receiving channels.

3. The apparatus as recited in claim 2, wherein at least two of said plurality of receiving channels are symmetrically placed about said personal data assistant to enable ambidextrous placement of said user-removable antenna and said stylus.

4. The apparatus as recited in claim 2, wherein said second end extending at least partially into said plurality of receiving channels each further comprise transmission line contact interfaces for electrically interfacing with said user-removable antenna.

5. The apparatus as recited in claim 1, wherein said plurality of electrically symmetrical transmission lines have an electrical length approximating one-half wavelength of the frequency used by said wireless personal data assistant.